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## NEWS

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# Nuclear Medicine

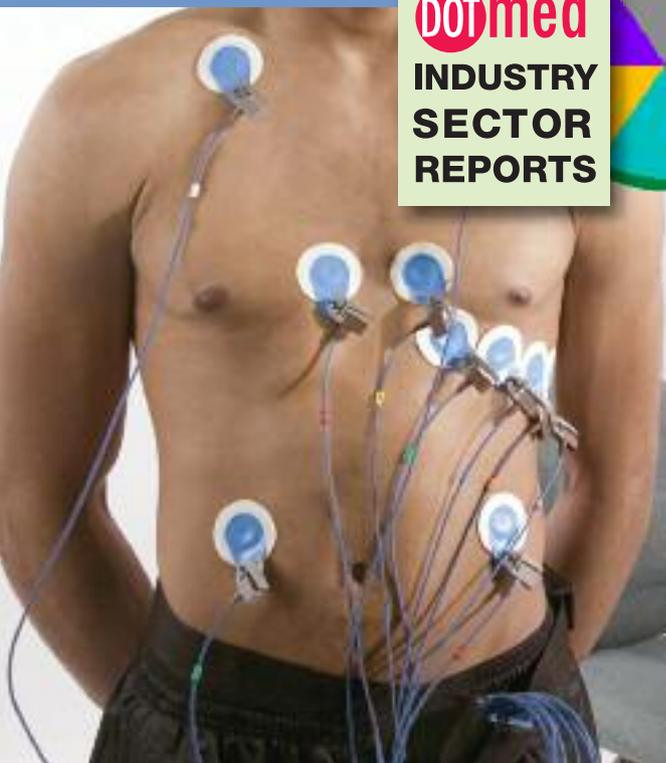


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# Stress Testing Equipment Sales & Service Companies

## Unmasking unhealthy hearts early on

By Joan Trombetti

A stress test is becoming almost de rigueur among the Boomer generation, suggesting that its capacity to generate revenue is quite significant.

At the same time, evaluating the heart and vascular system while the body is under stress from exercise saves countless thousands of those Boomers' lives.

In short, it's easy to make the case that stress tests are a win-win for everyone.

What happens in a test goes something like this: a baseline electrocardiogram (ECG) is obtained before the patient begins to perform a low-level of exercise – usually by walking on a treadmill or a stationary bike. The pace gradually increases as the patient's pulse, blood pressure and ECG are recorded and symptoms noted.

There are maximal stress tests (level

of exercise gradually increases until patient becomes fatigued or suffers chest pain, shortness of breath or lightheadedness or changes are indicated on the ECG) that are used to diagnose the presence or absence of coronary artery disease. There are also sub-maximal stress tests (patient exercises for only a certain period of time to determine what level of exercise can be done safely) that are used with patients who are known to have coronary disease.

Sometimes a drug such as adenosine, dobutamine, or persantine is used, instead of a treadmill, to simulate the heart's reactions to exercise. These drugs are safe and reasonably well tolerated, and are usually only given when the body is unable to perform a standard stress test; for instance if a patient is particularly out of shape, has lost limbs, or is severely arthritic. They are as reliable for evaluative purposes as the exercise test.

### Technological leadership

Wayne Quinton teamed up with Dr. Robert Bruce in 1953 and developed the first clinical protocol enabling consistent and repeatable cardiac testing at an elevated heart rate. Quinton also invented the first mechanical treadmill. Together, the doctors established the genesis of modern cardiac stress testing. In fact, Cardiac Science, Bothell, WA, manufactures the direct descendants of Quinton's designs and products.

### At the heart of saving lives

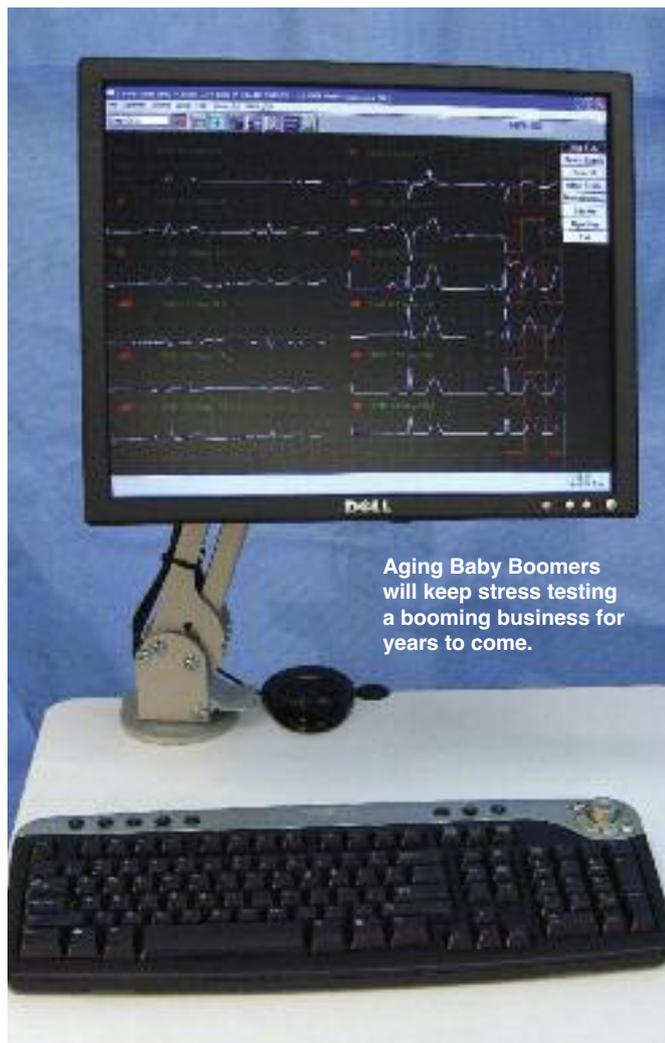
In 2005, Cardiac Science signed a merger agreement with Quinton's company. "Our vision is to be the company the global community thinks of first for high-quality, noninvasive cardiac products and services," says John Hinson, President and CEO, Cardiac Science

Corporation. Also in 2005, Frost & Sullivan's analysis, U.S. ECG and Cardiac Monitoring Products and Service Markets, selected Cardiac Science as the recipient of the 2005 Product Innovation Award for its continued dedication to innovation in cardiac stress testing systems.

For the first quarter ending March 31, 2008, Cardiac Science reported revenue at \$49.0 million, an increase of 17% over the prior year period.

Q-Stress is Cardiac Science's eighth generation stress system to carry on the Quinton legacy. Key to the system is the opportunity for extensive customization, including the latest software enhancements, risk scoring, full disclosure procedure re-analysis, and freeze frame. Clinical capabilities include ECG full-disclosure and archive, in-test ECG review, automated patient risk scoring, dynamic ST display and ectopic beat capture.

Dr. Diana Westerfield of Cardiology Diagnostics, Ltd. and Barnes-Jewish St. Peters Hospital, St. Louis, MO, says that she does 30 or more stress tests a day and was impressed not only with the Cardiac Science treadmill but also how the computer telemetry and the printing mechanism for the ECG worked so well together. "In my world, you sometimes have trouble with pieces of equipment talking to each other or the connection breaking down. With Cardiac Science Equipment you just don't see it" she says.



Aging Baby Boomers will keep stress testing a booming business for years to come.

## GE presents a powerful CASE for Stress Testing

The advanced assessment capabilities from GE Healthcare, Wauwatosa, WI, are built on Marquette measurement and analysis algorithms that offer excellence in data accuracy and high quality ECGs. GE's patented finite residual filter provides a high quality ECG in the presence of artifacts that can be associated with exercise testing.

For the 2008 Olympics, GE Healthcare is providing the Beijing Organizing Committee for the Olympic Games (BOCOG) with the GE MAC 1200 (a portable ECG device) incorporating the GE Marquette 12SL that provides consistent analysis and interpretation. GE Healthcare is also providing BOCOG with the CASE Stress System, the only exercise testing system that can be equipped with GE's Modified Moving Average algorithm to measure T-Wave Alternans for the purpose of assisting physicians in predicting patients' risk of Sudden Cardiac Death.

The Marquette 12SL ECG Analysis program is a computer program for analyzing simultaneously acquired 12-lead ECGs. It makes precise measurements of recorded cardiac signals, and provides an interpretation of the ECG waveforms using classic and newly developed ECG interpretation criteria for both rhythm and morphology.

"Our ECGs are an excellent example of GE Healthcare's ability to provide a broad range of clinical solutions to the world's largest sporting event," said JK Koo, General Manager of GE Healthcare Clinical Systems, Asia.

## Flagship products from Nasiff

Roger Nasiff, President of Nasiff Associates, Inc., Brewertown, NY, is the mastermind behind the Nasiff Cardio Card Software. He launched his company in 1989, to develop the world's first PC ECG/PC EKG. "We're committed to providing medical PC solutions to healthcare professionals by developing medical diagnostic and administrative products, which integrate into any personal PC computer," Nasiff says.

Among company firsts: producing a clinically useful PC-based PC ECG/EKG, building a PC based Stress ECG System, developing a notebook (PCMCIA or USB) based ECG System and integrating stress and holter into one system Nasiff calls the Cardio Suite™. Nasiff's flagship products are the Cardio-Suite and the CardioVitals, which consists of ECG, NIBP (non-invasive blood pressure) SpO2 (amount of oxygen being carried by the red blood cells in the blood) and temperature.

## Stress test equipment refurbishers play a role in the industry

Joe Murray, president, Medeco, Inc., Boise, ID, (a DOTmed user since 2003) sells quality, patient-ready, used, refurbished and new stress test systems including GE/Marquette, Quinton and Nasiff "Cardio Card" Stress test systems. "Hospitals represent about half of our sales," says Murray, "with clinics, private physicians and rehab center accounting for the rest." Murray rates GE and Quinton the industry leaders.



The lowly treadmill can elevate the heart rate high enough to accurately test cardiac function.

According to Murray, Nasiff equipment is also among the best since they are the pioneers of PC based monitoring and stress systems. Medeco bundles Nasiff's Cardio Card Stress software with name-brand hardware, a hospital grade isolation transformer and customized components. In order to meet its pricing strategy, Medeco chooses to engineer an interface to a GE T-2000 digital treadmill that's rebuilt to near new condition. The result is a full-featured system that competes favorably with systems selling for twice as much. Murray says that the only thing missing from the package is "the big corporate logo."

Economics suggest that the most cost effective stress testing systems on the market are reconditioned. DOTmed deals with many reputable companies that sell stress systems, and buyers can save as much as half the price of a new one.

PRN, Inc., Fall River, MA, sells all major brands of stress testing systems including Quinton, GE, Marquette, Burdick, Trackmaster, and Cambridge Heart.

The founder and President of PRM,

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Inc., Bob Gaw, has a DOTmed Webstore, where stress test equipment is often a featured listing. Gaw says that although PRN has not used DOTmed auctions in the past to sell stress systems, “we’re planning our first stress system auction very soon.”

PRN stress system’s refurbishing division is lead by Bob Gaw, Jr. In refurbishing PRN replaces the parts under most duress, treadmill tracks, decking systems, patient cables and modules.

PRN sells about 30-50 stress systems per year, and Gaw says that a hospital saves 25-75% off manufacturer’s pricing depending on the age of the equipment the hospital requires.

### Physicians that are driving the stress equipment market.

“If a doctor is used to a system that is 15 years old, he or she may request that specific system or may ask for an additional system in a satellite facility to match the protocol of the system currently being used,” Gaw says.

PRN, Inc.’s clients include Beth Israel Deaconess Hospital in Boston. Gaw is always looking to purchase stress equipment and will travel almost anywhere to get it. Because the company is a member of a nationwide buyer’s network, PRN is able to offer discounts on stress systems as well as other medical equipment from many of the major medical equipment manufactures.

Nils Nilsson, Director of Operations, Advanced Electronic Diagnostics, Inc., (AED) Royal Palm Beach, FL, believes

that over the last few months, the stress test equipment (and all medical equipment) markets have slowed down because high gas prices and a poor economy have led patients to postpone indefinitely visits to the doctor. “Fewer patients equals less revenue and less spending,” says Nilsson.

AED sells mainly GE, Burdick, Quinton and Marquette stress equipment as well as new PC based systems (full-featured systems with a super duty treadmill). AED costs are very competitive over new units with savings up to 40 percent or \$5,000 to \$8,000 on refurbished units.

price to upgrade an OEM system like GE or Burdick is typically not cost effective,” says Nilsson. “The bottom line, older non- windows systems can last 10 to 20 years of daily use without major repairs.” Nilsson calls these systems ‘the battleships of medical equipment.’ “We have to accept the PC is here to stay for all new computerized medical equipment, and we just have to continue to develop new ways to make them reliable.”

Phil Lonbeck, President, DB Medical Electronics, has over 30 years experience in medical diagnostics. DB Medical Elec-

## Economics suggest that the most cost effective stress testing systems on the market are reconditioned.

The refurbishing process at AED includes a thorough check of stress monitors that includes inspecting the internal frame for signs of damage, internal cleaning, inspecting or replacing cooling fans, and a complete PC diagnostic test using commercial software for extensive testing of all components.

Nilsson has found that when an accessory like an inkjet printer or monitor needs to be replaced in an older Windows based system, the new printer, monitor and video card often will not work with Windows 95 and 98, due to driver support. In cases like this, the whole unit may have to be upgraded if possible or replaced. “The

tronics, located in Diamond Bar, CA, refurbishes and sells GE/Marquette and Cardiac Science Quinton stress testing equipment. Purchasing a refurbished stress system from DB can save a buyer 50 to 60 percent. DB replaces all treadmill belts during refurbishing and certifies all mechanical components. It also certifies the system to MFG specs with a parts and labor warranty.

Lonbeck says that he has not seen any new technology that is threatening the traditional stress test, suspecting the sale of stress test equipment will continue to grow as the Boomer generation ages.

**Read more: [dotmed.com/dm6660](http://dotmed.com/dm6660)**

### DOTmed Registered Stress Testing Equipment Sales and Service Companies

For convenient links to these companies’ DOTmed Services Directory listings, go to [www.dotmed.com](http://www.dotmed.com) and enter [DM 6660]

**Names in boldface are Premium Listings.**

Name	Company - Domestic	City	State	Certified	DM100
<b>Phil Lonbeck</b>	<b>DB Medical Electronics</b>	<b>Diamond Bar</b>	<b>CA</b>		
<b>Joe Avina</b>	<b>American International Medical</b>	<b>Sylmar</b>	<b>CA</b>	●	●
Marc Gorski	Vital Signs Medical, LLC	Rocky Hill	CT		
Carlos Restrepo	TECHNOMEDICAL INSTRUMENTATION	Pembroke Pines	FL		
Nils Nilson	Advanced Electronic Diagnostic Inc.	Royal Palm Beach	FL		
<b>Robert Gaw Jr.</b>	<b>Physicians Resource Network</b>	<b>Fall River</b>	<b>MA</b>		
<b>Rob Rankin</b>	<b>Rankin Biomedical Corporation</b>	<b>Holly</b>	<b>MI</b>	●	
<b>Mitchell Guier</b>	<b>North American Medical</b>	<b>Sweet Springs</b>	<b>MO</b>	●	●
Roger Nasiff	Nasiff Associates, Inc	Brewerton	NY		
<b>Abe Sokol</b>	<b>Absolute Medical Equipment</b>	<b>Wesley Hills</b>	<b>NY</b>	●	